CLAIMS

What is claimed is:

1. A method for processing video data, comprising:

receiving a principal video stream from a source;

receiving a video sub-stream containing supplemental information associated with the principal video stream;

in a single stage operation, performing an operation on the principal video stream and combining the principal video stream with the video sub-stream to produce processed data; and

outputting the processed data.

2. The method according to claim 1, wherein the performing of the operation comprises de-interlacing the principal video stream.

3. The method according to claim 1, wherein the performing of the operation comprises resizing the principal video stream.

4. The method according to claim 1, wherein the performing and the combining involve a single call to memory.

5. The method according to claim 1, wherein the performing and the combining are performed in a YUV color space.

6. The method according to claim 1, further including a step of forwarding instructions to a graphics processing module, the instructions informing the graphics processing module how to execute the performing and the combining.

7. The method according to claim 6, wherein the instructions identify a location at which to receive the principal video stream, a location at which to receive the video sub-stream, and a location at which to provide the processed data.

8. The method according to claim 7, wherein the instructions identify a rectangle of data from which to receive the principal video stream within a video stream surface, a rectangle of data from which to receive the video sub-stream within a video sub-stream surface, and a rectangle at which to output the processed data within a destination surface.

9. The method according to claim 1, wherein the video sub-stream includes at least one of: close captioned information; DVD sub-picture information; and PAL teletext information.

10. The method according to claim 1, wherein the performing and the combining are performed on an apparatus that uses a Uniform Memory Architecture (UMA) design.

11. An apparatus for processing video data, comprising:

a renderer module;

a data processing module; and

an interface module that couples the renderer module to the data processing module,

wherein the renderer module includes logic configured to generate and provide instructions to the data processing module to execute at least the following functions in a single stage:

a) performing an operation on a received principal video stream; and

b) combining the received principal video stream with a video sub-stream.

12. An apparatus according to claim 11, wherein the performing of the operation comprises de-interlacing the principal video stream.

13. An apparatus according to claim 11, wherein the performing of the operation comprises resizing the principal video stream.

14. The apparatus according to claim 11, wherein the data processing module is configured to execute the performing and the combining using a single call to memory.

15. The apparatus according to claim 11, wherein the performing and the combining are performed in a YUV color space.

16. The apparatus according to claim 11, wherein the instructions provided by the renderer module inform the data processing module how to execute the performing and the combining.

17. The apparatus according to claim 16, wherein the instructions identify a location at which to receive the principal video stream, a location at which to receive the video sub-stream, and a location at which to provide the processed data.

18. The apparatus according to claim 17, wherein the instructions identify a rectangle of data from which to receive the principal video stream within a video stream surface, a rectangle of data from which to receive the video sub-stream within a video sub-stream surface, and a rectangle at which to output the processed data within a destination surface.

19. The apparatus according to claim 11, wherein the video sub-stream includes at least one of: close captioned information; DVD sub-picture information; and PAL teletext information.

20. The apparatus according to claim 11, wherein the apparatus is configured to operate using a Uniform Memory Architecture (UMA) design.

21. The apparatus according to claim 11, wherein the data processing module comprises a graphics processing module.

22. The apparatus according to claim 21, wherein the graphics processing module is configured to execute video processing tasks using a graphics pipeline.

23. The apparatus according to claim 11, wherein the data processing module includes multiple texturing units, wherein a first texturing unit is allocated to a

component of the received video stream, and a second texturing unit is allocated to the received video sub-stream.

24. The apparatus according to claim 23, wherein the data processing module is configured to execute the performing and the combining in a single stage by processing video data obtained from the first and second texturing units substantially in parallel.

25. An apparatus for processing video data, comprising:

a memory;

a computer processing module for controlling the apparatus, the computer processing module being coupled to the memory;

a renderer module;

a graphics processing module coupled to same memory as the computer processing module; and

an interface module that couples the renderer module to the graphics processing module,

wherein the renderer module includes logic configured to generate and provide instructions to the data processing module to execute at least the following functions in a single stage:

a) performing an operation on a received principal video stream; and

b) combining the received principal video stream with a video sub-stream,

wherein the graphics processing module includes logic configured to receive the instructions, and in response thereto, execute the performing and the combining.

26. An apparatus for processing video data, comprising:

means for receiving a principal video stream from a source;

means for receiving a video sub-stream containing supplemental information associated with the principal video stream;

means, in a single stage operation, for performing an operation on the principal video stream and combining the principal video stream with the video sub-stream to produce processed data; and

outputting the processed data.

27. A computer readable media having machine readable instructions stored thereon, the instructions comprising:

logic configured to receive a principal video stream from a source;

logic configured to receive a video sub-stream containing supplemental information associated with the principal video stream;

logic configured to, in a single stage operation, perform an operation on the principal video stream and combine the principal video stream with the video sub-stream to produce processed data; and

logic configured to output the processed data.